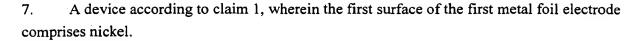


- 1. An electrical device comprising
 - (A) an element which
 - (1) has first and second surfaces and
 - (2) comprises a conductive polymer composition, and
 - (B) a first metal foil electrode which
 - (1) comprises
 - (a) a first surface having (i) a center line average roughness R_a μm,
 and (ii) a reflection density RD, the product R_a times RD being
 0.5 to 1.6 μm, and
 - (b) a second surface, and
 - (2) is positioned so that the first surface of the electrode is in contact with the conductive polymer element.
- 2. A device according to claim 1 wherein R_a is 0.5 to 2.7 μ m and RD is at least 0.5.
- 3. A device according to claim 1 wherein the conductive polymer composition comprises a polymeric component and dispersed therein a particulate conductive filler.
- 4. A device according to claim 3 wherein the polymeric component of the composition comprises a polyolefin or a fluoropolymer.
- 5. A device according to claim 1 wherein the conductive polymer composition exhibits PTC behavior.
- 6. A device according to claim 1 wherein the first metal foil electrode comprises nickel or copper.



- 8. A device according to claim 1, further comprising a second metal foil electrode positioned so that the conductive polymer element is sandwiched between the first metal foil electrode and the second metal foil electrode.
- 9. A device according to claim 1 wherein the device is a circuit protection device which has a resistance of at most 100 ohms.
- 10. An electrical device comprising
 - (A) an element comprising a conductive polymer composition, and
 - (B) a first metal foil electrode which
 - (1) is produced by
 - (a) providing a base metal foil having a first surface having a center line average roughness R_a of at most 0.45 μ m, and
 - (b) depositing material to provide protrusions onto the first surface of the base metal foil,
 - (2) comprises
 - (a) a first surface having (i) a center line average roughness R_a μm,
 and (ii) a reflection density RD, the product R_a times RD being
 at least 0.14 μm, and
 - (b) a second surface, and
 - is positioned so that the first surface of the electrode is in contact with the conductive polymer element.
- 11. An electrical device comprising
 - (A) an element comprising a conductive polymer composition,



- (B) a first metal foil electrode which comprises
 - (1) a first surface which is attached to the conductive polymer element and has
 - (a) a center line average roughness $R_a \mu m$, and
 - (b) a reflection density RD, the product R_a times RD being at least 0.14 μm , and
 - (2) a second surface, and
- (C) a crosslinking agent positioned between the first electrode and the conductive polymer element.
- 12. A device according to claim 11, wherein the conductive polymer composition exhibits PTC behavior.
- 13. A device according to claim 11, wherein the crosslinking agent comprises dicumyl peroxide.
- 14. A process for making an electrical device, said process comprising
 - (A) providing an element comprising a conductive polymer composition,
 - (B) providing a first metal electrode having
 - a first surface having a center line average roughness R_a and a reflection density RD such that the product R_a times RD is at least 0.14 μm, and
 - (2) a second surface,
 - (C) positioning at least one crosslinking agent between the conductive polymer and the first surface of the first metal electrode, and



- (D) securing the first surface of the metal electrode to the conductive polymer element with the crosslinking agent therebetween.
- 15. A process according to claim 14 wherein the crosslinking agent is activated concurrently with the securing process.
- 16. A process according to claim 14 wherein the crosslinking agent is activated by thermal or radiation means.
- 17. An electrical device comprising
 - (A) an element comprising a conductive polymer composition and
 - (B) in contact with the element, a metal electrode comprising
 - (1) a base metal foil and
 - (2) first and second surfaces, said first surface comprising
 - (a) protrusions having a maximum height of 1 μm and
 - (b) a reflection density RD of at least 0.6.
- 18. A device according to claim 17 wherein the metal electrode is produced by a process comprising
 - (A) providing a base metal foil having first and second surfaces, and
 - (B) pulse plating metal deposits onto at least the first surface of the foil using a pulse frequency of 10 to 1000 Hz.
- 19. A device as in claim 17, wherein the base metal foil comprises copper or nickel and the metal deposits comprise copper or nickel.
- 20. An electrical device comprising
 - (A) an element comprising a conductive polymer composition and





- (B) a metal electrode, the metal electrode comprising
 - (1) a base metal foil,
 - (2) a first surface which
 - (a) comprises dendritic metal structures, and
 - (b) is in contact with the element, and
 - (3) a second surface.
- 21. A device according to claim 20 wherein the metal electrode is produced by a process consisting essentially of
 - (A) providing a base metal foil having a first surface and a second surface, and
 - (B) depositing dendritic metal structures onto at least the first surface of the base metal foil by electrodepositing metal under diffusion limited conditions.
- 22. A device according to claim 20, wherein the base metal foil comprises copper or nickel and the metal dendrites comprise copper or nickel.
- 23. An electrical circuit which comprises
 - (1) a source of electrical power;
 - (2) a load; and
 - (3) a circuit protection device according to claim 1 electrically connecting the source and the load.